DSCOPE SERIES III

THE COMPLETE SOLUTION FOR AUDIO TEST AND MEASUREMENT

PRISM SOUND

mEASUREMENT TECHNOLOGY

GREAT PERFORMANCE

GREAT FEATURES

GREAT PRICE

AND IT'S PORTABLE.

DScope Series III
PrismSound

PrismSound

STATE-OF-THE-ART MEASUREMENT PERFORMANCE:

dScope Series III delivers the precision needed for the latest audio technology such as CD, DVD, high-end audio, Internet audio, digital telephony and communications. Continuous FFTs (Fast Fourier Transform spectral measurements) may be performed at 256k point resolution with 64-bit floating point maths. Measurement accuracy, especially of small residuals in the presence of large signals, is maintained.

COMPREHENSIVE MEASUREMENT CAPABILITY:

dScope Series III provides the standard audio test facilities but also incorporates many important new features needed to work with the latest audio technologies. These include digital interface test tools such as carrier waveform and eye-pattern display, jitter measurement and AES3/IEC958 Channel Status generation and analysis as well as support for higher sampling rates and the means to generate complex waveforms to your own specification such as multi-tone sets. FFT analysis can be performed up to 256K points and this allows quick and accurate assessment of a range of commonly tested results.

EASY TO USE:

Offering so much, the dScope Series III could have been complicated to use, but the screen display can easily be tailored to suit the user and the application. Whether a simple generator and voltmeter are needed, or a sophisticated configuration with FFT, 'scope, eye-pattern and other displays, the dScope Series III is equally suitable.

EASE OF CALIBRATION:

dScope III requires no hardware adjustments: The entire calibration is performed in software, and calibration coefficients are stored in EEROMs on their respective modules; modules can therefore be interchanged without re-calibration. To ensure traceability re-calibration must be performed using suitably-qualified external test references.

COMPATIBILITY WITH OTHER WINDOWS APPLICATIONS:

dScope Series III can exchange test data with other Windows applications such as spreadsheets, databases and word processors for report generation, record-keeping and analysis.

PORTABILITY:

With a briefcase-style flight-case containing the test system and your notebook PC, dScope Series III is instantly ready for use wherever you are.
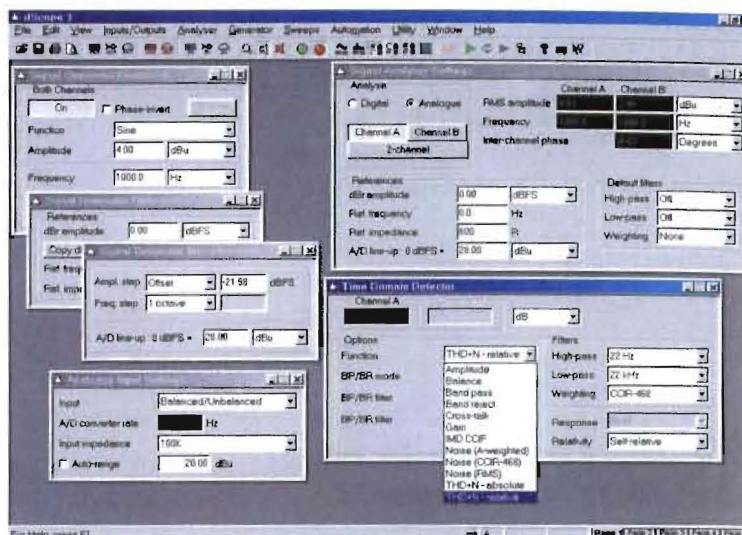

TWO-CHANNEL ANALOGUE AND DIGITAL SIGNAL GENERATORS

- Wide choice of standard functions including Sine, Square, Ramp plus complex waveforms such as bursts, pulse, MLS and twin-tone.
- Independent generators for A and B channels, each driving analogue and digital outputs concurrently.
- Scriptable waveforms allowing, for example, user-defined multitone or tone-burst generation.
- Adjustable alignment between analogue and digital domain.
- Digital generator can be synchronised to any standard AES11, WCK or video reference (or internally) and can generate at any standard rate with +/-1000ppm variation in 1ppm steps.

TWO-CHANNEL ANALOGUE AND DIGITAL SIGNAL ANALYZER

The dScope Series III provides a Continuous-Time Analyzer (CTA) capable of registering the fastest peaks or performing CCIR468 weighted measurements and a sampling Fast Fourier Transform (FFT) Analyzer, useful for detailed spectral analysis.. Both types of analysis may be performed concurrently. Amplitude, frequency and phase readings are always available in the signal analyzer, regardless of the functions selected in the Continuous Time Analyzer (CTA) or the FFT analyzer measurement detectors.
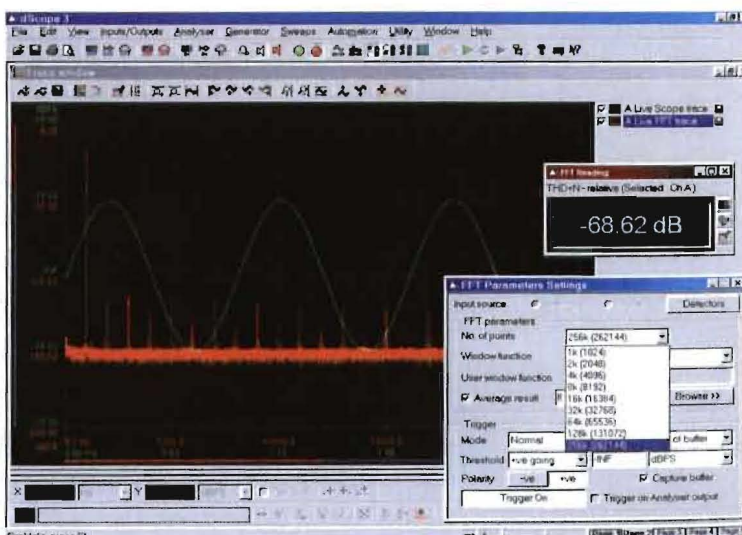
TRACE WINDOW

- Single or dual channel trace display with 'scope; FFT and sweep capability; trace zooming; labelling; store and recall; trace markers; print preview.
- CTA detector residual output (for example THD+N) can be viewed with FFT and signal waveform; other traces include FFT of CTA residual, FFT of digital interface jitter and sweeps.
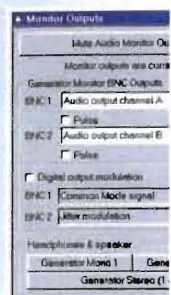

TWO-CHANNEL CONTIN

The CTA is a real-time ins combination to perform a
- Real-time readings for tv
- High and low pass and v
- Tracking or fixed band-p

TWO-CHANNEL FFT AN

The FFT analyzer operates trigger facility. Various sca FFT detector result. Many i
- Broad selection of FFT wi high-performance propriet
- Real-time trace averaging
- Wide range of FFT-derive
- Scriptable FFT Window fu

MONITOR OUTPUTS

Flexible monitor system pr generator, analyzer, and headphone output and buil

Customize the system wit

Automation is by means of

Configuration snapshots ar

## TWO-CHANNEL CONTINUOUS-TIME ANALYZER (CTA)

The CTA is a real-time instrument with various filters which may be used in combination to perform a range of measurements.

- Real-time readings for two channels including amplitude, THD+n etc.
- High and low pass and weighting filters.
- Tracking or fixed band-pass/band-reject filter.

TWO-CHANNEL FFT ANALYZER

The FFT analyzer operates on a sampling basis and aquisition is controlled by a trigger facility. Various scalar readings can be derived from it and displayed as an FFT detector result. Many FFT-derived readings can be displayed concurrently.

- Broad selection of FFT window functions incorporating industry standards and high-performance proprietary types.
- Real-time trace averaging "as you watch".
- Wide range of FFT-derived measurement results for THD, IMD etc.
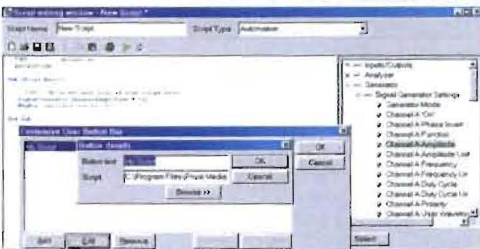- Scriptable FFT Window functions and measurement readings.
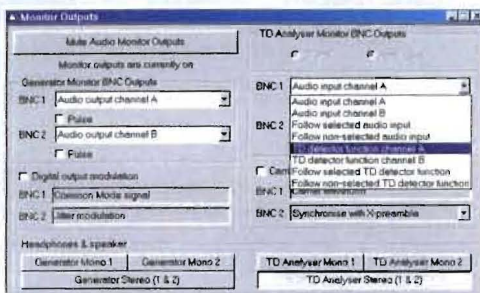
MONITOR OUTPUTS

Flexible monitor system provides assignable BNC connectors which can monitor generator, analyzer, and auxiliary functions (including digital carriers); headphone output and built-in loudspeaker can also be assigned.
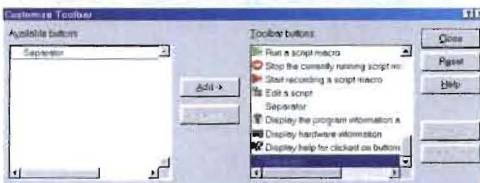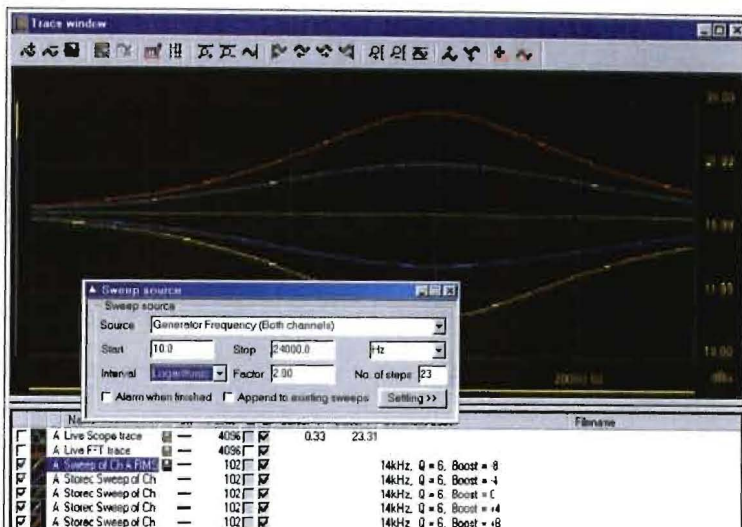
Customize the system with your own personalized toolbar

Automation is by means of Visual Basic Scripting (VB Script).
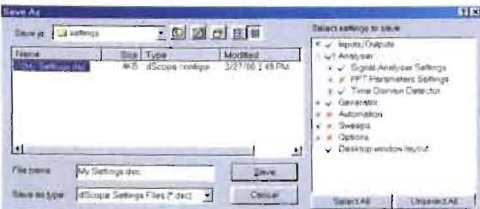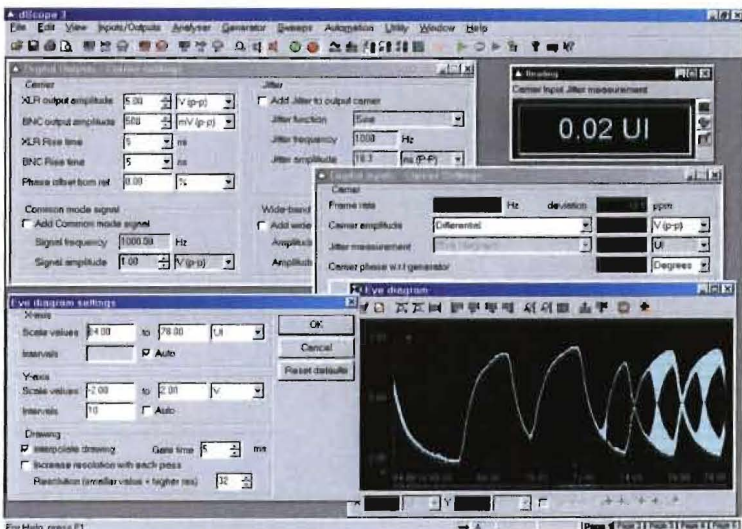
Configuration snapshots and scripts (test procedures) can be stored on disk.

SWEEP ANALYZER

Sweeps up to four variables and may simultaneously measure up to four results.

DIGITAL INTERFACE TESTING

- Simulation of lossy cables and/or jittered sources by the digital generator.
- Measurement and display of source and cable-induced jitter components, sample-rate, eye narrowing & carrier amplitude.

- Routing of demodulated jitter signal to FFT analyzer enables viewing of jitter spectrum.
- Full support for Channel Status generation and analysis.
- In-line patching of Channel Status.
- Display of binary data by Channel Status fields.
- Control and display of 'Valid' bits
- Word length control and bit activity indication.
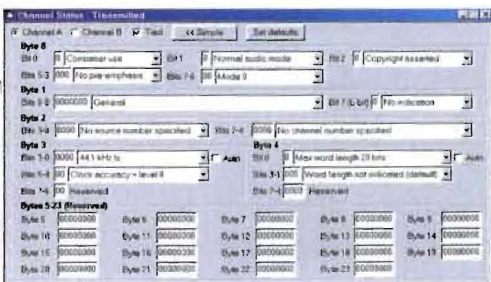
LIMIT CHECKING

- Graphical limits can be set and violations flagged.

READINGS

- Reading windows can be 'dragged' out of analyzer windows and resized to customize your view of the instrument.
- Headings, colours and units can be adjusted.
- Display can include a bargraph.
- Upper and lower limits and alarms can be set.

D S C O P E   S E R I E S   I I I

A U D I O   T E S T   S Y S T E M

TECHNICAL DATA

dScope Series III is a portable audio test system that is remotely controlled by a Windows98 or Windows2000 PC. The dScope Series III unit is complemented by an easy to use software application. Communication with the host PC is by means of a USB link, providing true plug-and-play installation with no need to put anything inside the PC. dScope Series III supports the new OLE/COM standards, allowing data to be exchanged easily with other applications.

ANALOGUE SIGNAL GENERATOR
Frequency range: <1Hz..86kHz
Amplitude range: <-100dBu.. +28dBu(bal)/+22dBu(unbal)
Residual THD+n (20Hz..20kHz): -105dB
Multitones: 2-128, 20Hz..20kHz, 0.73Hz resolution
User waveforms: 0.73Hz resolution at 192kHz
   0.18Hz at 48kHz
   Bongs
   Square-Wave
   Polarity checking
   Multi-tone: Quick results from a single FFT trace showing frequency response, noise & distortion
Output: XLR or coaxial BNC
   Balanced, common-mode 40R, 150/200R*, 600R. Max output +28dBm into 600R
   *Note: Jumper selected
   Unbalanced 20R, 600R, floating/grounded
   Asymmetric 600R,20R

ANALOGUE SIGNAL ANALYZER
Amplitude range; noise...peak: 1.1uV..159Vrms
   Input XLR or coaxial BNC/RCA 100kR, 150/200R**, 600R (1W)
   **Note: Jumper selected
Small-signal CMRR: <-80dB,
Frequency range: <5Hz..86kHz
Residual THD+n (20Hz..20kHz): -108dB
Frequency resolution: 0.01 Hz
Phase resolution: 0.1 degrees

DIGITAL SIGNAL GENERATOR (DATA)
Wordlength: 8bits..24bits
Dither: TPDF
DC resolution: 48bits
Frequency range: 1Hz-fs/2 (maximum 96kHz)
Residual THD+n (20Hz..20kHz): <-140dBFS
User waveforms: as analogue signal generator
Channel Status: Fully settable for each channel
Valid bits: Settable for each channel

DIGITAL SIGNAL GENERATOR (SYNC)
Reference input formats: AES11, (XLR); WCK, (BNC); Video, (BNC) PAL/NTSC/SECAM
Termination: switchable
Reference input rates: Any standard rate Automatically recognised and measured with 1ppm accuracy
Test input carrier phase wrt reference: 0..127.9UI (+/-180 degrees) displayed
Reference output formats: AES3, (XLR); WCK (BNC)

DIGITAL SIGNAL GENERATOR (CARRIER)
Formats: AES3, (XLR); S/PDIF, (RCA); AES3-id, (BNC); TOS, (optical); 1wire/2wire at high rates (Sony SDIF-3/DSD options planned)
Output impedance: 110R, 75R
Sampling rates: 32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz*, 192kHz*** +/- 1000ppm in 1ppm steps
Carrier amplitude: XLR and coaxial independently settable
Rise times; XLR and coaxial independently settable 5ns..200ns
Added jitter: Audio functions to 40kHz LF/HF noise, 0..0.5UI HF, 0..20UI LF
Added normal mode interference: Noise, 256 amplitude steps
Added common mode interference: up to 40kHz, max 20V p-p
(*** Note : Single channel only using 1 AES bearer at 88.2 or 96kHz frame rate.)

DIGITAL SIGNAL ANALYZER (DATA)
Frequency range: DC..fs/2 (maximum 96kHz)
Residual THD+n (20Hz..20kHz): <-140dBfs
Wordlength: Bit activity displayed
Channel Status: Displayed and decoded for each channel
Validity: Displayed for each channel

FFT ANALYZER
FFT Points: 1k-256k
Analogue THD+n (20Hz..20kHz): <-106dB
Digital THD+n (20Hz..20kHz): <-140dB
Processing precision: 48+16 Floating Point
Window functions: Industry standard window functions plus proprietary Prism Sound windows to 150dB dynamic range

DIGITAL SIGNAL ANALYZER (CARRIER)
Formats: AES3, (XLR); S/PDIF, (RCA); AES3-id, (BNC); TOS, (optical); 1wire/2wire at high rates (Sony SDIF-3/DSD options planned)
Input impedance: 75R, 110R or HiZ
Input sampling rate: 28.8-105.6kHz, up to 200kHz in 2wire mode**** Measured with 1ppm resolution
Carrier amplitude: Measured with 5mV resolution, 5% accuracy
Common-mode carrier amplitude (XLR): Measured with 20mV resolution
Jitter analysis: Measured P-P with 700Hz cutoff. Demodulated jitter can be passed to Time-domain and FFT analyzers.
Carrier display (Eye diagram): Display made with up to 300ps resolution
Signal condition indicators: Coding violations Biphase error, eye-narrowing, parity error

(**** Note : Single channel only using 1 AES bearer at up to 100kHz frame rate.)

MONITOR FUNCTIONS
Monitor outputs (BNC): Digital or analogue generator outputs, digital or analogue analyzer inputs, analyzer function outputs, digital carriers, demodulated jitter, sync pulses
Audio monitor: Loudspeaker or headphone, to monitor functions, with volume control.

TYPICAL USES:
- Research and development
- Production test
- Field service
- Maintenance

APPLICATIONS:
- Professional audio
- Broadcast
- Internet audio
- Multimedia
- Consumer products
- Sound reinforcement
- Telephony
- Communications

LIGHTWEIGHT CASE:
A custom-made case for the dScope Series III is available separately.

Completely self-contained in a custom carrying case, dScope Series III can be transported as carry-on airline luggage. No 'scope is needed to view signal or residual waveforms, or even digital carriers, and a monitor speaker is built-in.

PrismSound